

Biology in Focus

Better Lives Through Better Science

Sharing the Earth: Protecting Species at Risk and Preserving Land-Use Flexibility

How many western burrowing owls live in California? What North American ecosystem has as much plant diversity as a tropical rain forest? Is the prairie mole cricket a threatened species? The USGS Species at Risk Program seeks to answer these and other important and intriguing questions.

Established in 1994, the program's goal is to gain biological information on the status and habitat needs of plant and animal species that may be declining. Although not officially endangered, these species are in critical need of oversight. Government agencies and private landowners can use Species at Risk findings to make prudent and timely conservation decisions based on sound science.

Equally important, the Species at Risk Program can provide information that helps land managers prevent unnecessary Endangered Species Act listings. If scientists find that a species is unexpectedly thriving, unwarranted listings can be avoided. And if scientists find that a species is struggling, practical solutions for stabilization can be implemented, sometimes reducing the need for listing. By keeping species out of the

listing process, government agencies can minimize land-use restrictions, focus resources where most needed and enable landowners to maintain flexibility in how they use their property.

Species at Risk success stories tell of a brighter future for

declining species—without compromising the quality of life for neighboring humans. By gaining access to more complete information on species at risk and the problems they face, land managers are better equipped to protect the nation's biodiversity.

Aiding Scientific Discoveries

The Species at Risk Program involves participants from many sectors. Through a competitive grant process, the program has provided funding to USGS science centers, cooperative fish and wildlife research units, state heritage programs, universities, museums and conservation groups. Scientists at these organizations tell how pivotal scientific discoveries could not have moved forward without such funding.



Photo by Dan Rosenberg

A Species at Risk study spurred the development of conservation plans for the western burrowing owl.

The USGS Species at Risk Program develops vital scientific information that can help land managers protect biodiversity and prevent unnecessary listings under the Endangered Species Act.



U.S. Department of the Interior
U.S. Geological Survey

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Most Species at Risk studies involve species for which there is question or concern about endangerment but for which insufficient scientific data exist to justify action or inaction. Findings can provide missing pieces of valuable information so that informed decisions may be made by land management agencies.

Producing Voluntary Solutions

Completed studies are distributed to the U.S. Department of the Interior, other regulatory and land management agencies, state and local governments and private landowners. By producing reliable, impartial reports, the Species at Risk Program helps improve the decision-making process among diverse groups with varying priorities. "One of the most important outcomes of the program is that government agencies and private companies are working together as a team," said Jay Slack, a biologist at the U.S. Fish and Wildlife Service. The results of Species at Risk studies can help lead to voluntary solutions that meet the needs of landowners and imperiled species alike.



These flowers of the longleaf pine ecosystems of North Carolina were investigated as part of a Species at Risk study.



Improving Conservation Planning

David DeSante of the Institute for Bird Populations in Point Reyes Station, California, has learned firsthand how the Species at Risk Program can lead to better solutions for natural resource problems. DeSante managed a Species at Risk study to analyze California's population of western burrowing owls and to map their distributions. His

findings indicate that about 10,000 pairs of western burrowing owls live in California, mostly concentrated along irrigation channels. Although the owls are not endangered, population data suggest that if recent trends continue the owls may disappear from most of their breeding range in California. "Without Species at Risk funding," said DeSante, "the Institute for Bird Populations could not have generated this important information."

According to DeSante, the study is leading to the development of a statewide conservation plan for the owls that will be integrated into county conservation plans. For example, habitats for western burrowing owls could be integrated into commercial and residential developments.

With this kind of action, not only will the owls gain new homes, but residents will also gain a unique opportunity to coexist with these fascinating birds.

"The Species at Risk Program helps us focus our efforts on providing scientific information to foster voluntary conservation of species and habitats."

**Dennis Fenn, chief biologist,
USGS Biological Resources
Division**



Photos by the North Carolina
Natural Heritage Program

The Species at Risk Program is just one way the USGS Biological Resources Division helps support sound management of our nation's biological resources.

Protecting Rare Species

Another Species at Risk study that fostered better conservation planning focused on longleaf pine ecosystems in North Carolina. Conducted by the North Carolina Natural Heritage Program, the study surveyed 34 rare plants and animals that depend on longleaf pine ecosystems. Findings, which include recommendations for protecting various sites, have since been used by landowners and land managers to develop voluntary conservation agreements. With only 14 percent of America's southeastern longleaf pine forests remaining and just 3 percent surviving as old-growth habitat, these agreements have provided a constructive means for preventing further losses.

"Since the plant diversity of longleaf pine ecosystems rivals that of tropical rain forests, these areas are a national treasure worth protecting," said Linda Pearsall, manager of the North Carolina Natural Heritage Program. As Pearsall reflected, "Without the Species at Risk Program, it would have taken years to conduct such a comprehensive study."

Promoting Continued Survival

Also benefiting from the Species at Risk Program is the prairie mole cricket—a large burrowing insect that makes its home in the prairies of the south-central United States. As recently as 1984, the cricket was thought extinct and was proposed for listing under the Endangered Species Act. Listing of the species was deemed unnecessary, however, after surveys in 1991 revealed unexpected populations.

Still, USGS scientists recognized that continued survival of the prairie mole cricket required sound conservation decisions based on sufficient technical information. Accordingly, the Species at Risk Program funded the Department of Zoology at the University of Oklahoma to study the reproductive behavior of the crickets and to determine their physiological and habitat needs. Although the crickets are thriving in some areas, findings indicate that they are threatened across much of their range. As a result, study data have been put to use to establish management plans that will help protect the species.

The Bottom Line

"The bottom line," said USGS Species at Risk program manager Al Sherk, "is that the Species at Risk Program provides scientifically credible answers to compelling questions, thereby helping land managers protect the nation's biodiversity. Without this program," Sherk added, "pressing questions would go unanswered and critical gaps in our biological knowledge would remain."



Photo by © Stephen Hall

The rare venus flytrap moth depends on longleaf pine ecosystems.

"One of the most important outcomes of the Species at Risk Program is that government agencies and private companies are working together as a team."

**Jay Slack,
U.S. Fish and
Wildlife Service**

To learn more about the Species at Risk Program and the nation's biological resources, visit the following Internet home pages:

<<http://www.nbii.gov>>

<<http://biology.usgs.gov>>

<<http://biology.usgs.gov/outreach/infocus.htm>>

Or contact:

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Photo of owl by Dan Rosenberg



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